

**Firefighter II, Mod B**  
**Forcible Entry**

# **FIREFIGHTER II MOD B**

## **Forcible Entry**

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#### **2-10 FORCIBLE ENTRY**

- 2-10.1** Identify types, materials and construction features of doors. (3-3.3)
- 2-10.2** Identify types, materials and construction features of windows. (3-3.3, 3-3.10)
- 2-10.3** Identify types, materials and construction features of floors. (3-3.10, 3-3.11)
- 2-10.4** Identify materials and construction features of vertical barriers. (3-3.3)
- 2-10.5** Identify the procedures to use in forcing /opening the following components: (3-3.3, 3-3.7, 3-3.10, 3-3.11, 3-3.12, 3-5.3)
  - 2-10.5.1** Doors
  - 2-10.5.2** Windows
  - 2-10.5.3** Floors
  - 2-10.5.4** Vertical barriers
- 2-10.6** Identify the construction materials of door and window locking devices. (3-3.3)
- 2-10.7** Identify the procedures of through-the-lock entry for doors and windows. (3-3.3)
- 2-10.8** Identify methods and procedures for cleaning, maintaining and inspecting hand tools used for forcible entry. (3-3.3)
- 2-10.9** **Demonstrate proper selection and safely carry at least one of the following: (3-3.3(b))**
  - 2-10.9.1** Cutting tool
  - 2-10.9.2** Prying tool
  - 2-10.9.3** Pushing/pulling tool
  - 2-10.9.4** Striking tool
- 2-10.10** **Demonstrate forcing entry through each of the following: (3-3.3(b), 3-3.12(b))**
  - 2-10.10.1** Doors
  - 2-10.10.2** Windows
  - 2-10.10.3** Floors
  - 2-10.10.4** Vertical barriers
- 2-10.11** **Demonstrate the procedures of through-the-lock entry for doors. (3-3.10(b))**
- 2-10.12** **Demonstrate proper methods and procedures for cleaning, maintaining and inspecting a selected tool used for forcible entry. (3-3.3(b), 3-3.7(b), 3-3.10(b), 3-5.4 (b))**

#### **REFERENCES:**

IFSTA, Essentials, 4<sup>th</sup> ed., Chapter 8.

Delmar, Firefighter's Handbook, copyright 2000., Chapter 17

Jones & Bartlett, Fundamentals of Fire Fighting Skills, 1<sup>st</sup> ed., Chapters 8 & 11

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#### **2-10 Forcible Entry**

##### **I. Identify types, materials and construction features of doors. 2-10.1 (3-3.3)**

###### **A. Types**

1. Wood swinging
2. Metal swinging
3. Revolving
4. Sliding
5. Overhead
  - a. Folding/sectional
  - b. Roll down
  - c. Slab
6. Fire door

###### **B. Materials**

1. Wood
2. Metal
  - a. Aluminum
  - b. Steel
3. Glass
  - a. Tempered
  - b. Plexiglass
  - c. Lexan

###### **C. Construction Features**

1. Wooden swinging door
  - a. Panel
  - b. Slab
    - 1) Hollow core
    - 2) Solid core
  - c. Ledge/Batten

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2. Metal swinging door
  - a. Hollow metal
  - b. Metal covered
  - c. Tubular
3. Fire Doors
  - a. Self closing
  - b. Automatic closing
  - c. Assembly includes door, frame and hardware
4. Jambs
  - a. Rabbeted
  - b. Stopped

II. Identify types, materials and construction features of windows. **2-10-2** (3-3.3, 3-3.10)

A. Types

1. Double-hung/checkrail
2. Hinged/casement
3. Projected/factory
4. Awning and jalousie
5. High security
  - a. Lexan
  - b. Barred
  - d. Screened
6. Horizontal sliding
7. Fixed

B. Materials

1. Wood
2. Metal
3. Vinyl clad
4. Screens
5. Burglar bars
6. Wire mesh

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C. Construction features

1. Double-hung/checkrail
  - a) Two sashes
  - b) Glass may be:
    - 1) Single, double, or triple
    - 2) Thermopane
    - 3) Wire mesh
    - 4) Plexiglas, acrylic plastic or Lexan
2. Hinged/casement
  - a) Hinged on side
  - b) Swing outward
  - c) Crank operating device
3. Projected/factory
  - a) Swing
    - 1) Projected in
    - 2) Projected out
    - 3) Pivoted-projected
  - b) Metal with wire glass
4. Awning
  - a) 1 foot glass
  - b) Metal/wood frame
  - c) Crank out
5. Jalousie
  - a) 4-inch glass
  - b) No frame
  - c) Glass is heavy plate

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- 6. High security
  - a) Lexan
    - 1) 250 times stronger than safety glass
    - 2) Self-extinguishing
  - b) Barred (burglar bars)
    - 1) Attach
      - i.) Directly to building
      - ii.) Window frame
    - 2) Some are hinged and swing out
  - c) Screened
    - 1) Permanently installed
    - 2) Hinged top or side
    - 3) Fitted into brackets
- 8. Horizontal sliding
  - a) Can have one or more moving sashes
  - b) Sash moves by other sash horizontally
- 9. Fixed
  - a) Non-operable, usually used for light
  - b) Can be of any glazing material

III. Identify types, materials, and construction features of floors. **2-10.3** (3-3.10, 3-3.11)

A. Materials

- 1. Wood
- 2. Concrete/reinforced concrete

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- B. Construction features
  - 1. Wood
    - a. Wood joists spaced 16 inches apart
    - b. Sub floor
      - 1) 1 inch boards
      - 2) 4 foot by 8 foot plywood
    - c. Finish flooring
      - 1) Hardwood
      - 2) Carpeting
      - 3) Linoleum
      - 4) Tile
  - 2. Concrete
    - a. Poured in place
    - b. Pre-cast
- IV. Identify materials and construction features of vertical barriers. **2-10.4**
  - A. Material
    - 3. Gypsum
    - 4. Plaster
    - 5. Brick/block
    - 6. Concrete
    - 7. Steel
  - B. Construction features
    - 1. Gypsum
      - a.  $\frac{1}{2}$ " –  $\frac{5}{8}$ " thick
      - b. May be glued to studs
    - 2. Plaster
      - a. 1" thick
      - b. On wood or wire lath

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3. Brick/block
    - a. Solid course
    - b. Reinforced (rebar)
    - c. Filled with concrete or mortar
  4. Concrete
    - a. Poured in place
    - b. Pre-cast
  5. Steel
    - a. Lightweight
    - b. Heavyweight
  6. All walls – interior/exterior
    - a. Bearing
    - b. Non-bearing
  7. Walls conceal
    - a. Electrical wiring
    - b. Plumbing
    - c. Gas lines
    - d. Other utilities
    - e. Supports (bracing)
    - f. Hazards (asbestos)
- V. Identify the procedures to use in forcing/opening the following components: **2-10.5** (3-3.3, 3-3.7, 3-3.10, 3-3.11, 3-3.12, 3-5.3)
- A. Doors **2-10.5.1**
1. Size-up
    - a. Try before you pry
    - b. FD key box



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2. Breaking door glass
  - a. Choose appropriate tool
  - b. Stand windward side
  - c. Strike top of pane
  - d. Hands above point of impact
  - e. Clean out frame
  - f. Reach inside
  - g. Operate lock
  - h. Open door
  
4. Inward swing door – two firefighters
  - a. Place fork of Halligan-type bar just above or below lock
  - b. Angle tool slightly up or down
  - c. Strike tool with flat-head axe
  - d. Drive fork past interior door jamb
  - e. Move fork to prevent penetrating interior door jamb
  - f. Exert pressure toward door, forcing it open
  
5. Outward swinging door: Adze End method
  - a. Place adze of Halligan-type bar just above or below lock
  - b. Strike adze using flat head axe, driving it between door and jamb
  - c. Pry down and outward with fork end
  
6. Double swing doors
  - a. Secured by mortise lock
    - 1) Remove molding between doors
    - 2) Insert adze between doors
    - 3) Push down and outward until bolt clears keeper
  
7. Doors with drop bars (try one of the following):
  - a. Insert small narrow tool between doors and lift bar out of stirrup.
  - b. Cut triangular hole below bar. Reach in and bush bar out of stirrup.
  - c. Insert blade of rotary saw between jamb door or between doors and cut bar.

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8. Tempered plate glass door
  - a. Break glass with pick of pick-head axe
  - b. Strike bottom corner
  - c. Clear remaining glass from door
  - c. Last resort for access
9. Overhead door
  - a. Residential
    - 1) Break panel or window
    - 2) Reach in and unlock the locking mechanism
    - 3) Secure door to prevent closing
    - 4) If automatic opener:
      - a) Hold door in closed position
      - b) Break out panel near mechanism
      - c) Reach in with tool to grab release cord and pull
  - b. Commercial
    - 1) Three types
      - a) Manually operated
      - b) Chain operated
      - c) Electrically powered

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- 2) To force:
  - d) Cut or force the locks
  - e) Attack the locks
  - f) Cut through the gate by cutting a large inverted V-shaped cut in gate with power saw which allows slats to be pulled toward center and removed

#### **B. Windows 2-10.5.2**

1. Double hung/checkrail windows
  - a. Insert blade of axe or prying tool under center of bottom sash
  - b. Pry upward forcing screws out of lock
  - c. Open window
2. Hinged/casement windows
  - a. Break lowest pane of glass and clean out
  - b. Force or cut screen
  - c. Reach in and upward to unlock
  - d. Operate crank or levers at bottom
  - e. Completely remove screen and enter
3. Projected/factory windows: best method is to seek another entry point.
4. Awning and jalousie windows: select another entry point
5. High security windows
  - a. Lexan (try one of the following methods)
    - 1) Cut using rotary saw with carbide tip
    - 2) Discharge a carbon dioxide fire extinguisher on window, then strike with pick of axe
  - b. Barred or screened windows (try one of the following methods)
    - 1) Shear off bolt heads , if visible with axe, striking axe with Halligan bar
    - 2) Cut bar using rotary saw with metal blade
    - 3) Cut bar using oxyacetylene torch

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6. Horizontal sliding
    - a. Insert blade of axe or prying tool at the side center of the moving sash
    - b. Pry towards sash forcing screws out of lock
    - c. Open window
  7. Fixed
    - a. Break glass or other glazing if possible
    - b. Most often better to use another entry point
- C. Floors **2-10.5.3**
1. Wood floors
    - a. Determine location for hole
    - b. Sound for floor joists
    - c. Cut one side of the finished flooring, then the other side by using angle cuts.
    - d. Remove flooring or floor covering with the pick of axe
    - e. Cut sub-floor using the same technique
    - f. Circular saws, saber saws and chain saws can also be used.
  2. Concrete/reinforced concrete floors
    - a. Compressed air or electric jackhammers slow, but best means for rescue
    - b. Portable power saws with concrete cutting blade are available.
    - c. Special purpose nozzles designed to penetrate masonry and some concrete
- D. Vertical barriers **2-10.5.4**
1. Plaster or gypsum partition walls
    - a. Select location
    - b. Check for electric plugs and switches
    - c. Select forcible entry tools
    - d. Locate studs by sounding
    - e. Cut along studs (three bays wide)
    - f. Remove center stud to enlarge opening
    - g. Gain access

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2. Brick or concrete walls
  - a. Battering ram
    - 1) Made of iron
    - 2) Jagged end used for breaking brick and stone
    - 3) Rounded end used for walls and doors
  - b. Power tools
    - 1) Air chisels, hydraulic spreaders and rotary saws
    - 2) Cut diamond or triangular shaped hole large enough to pass through.
      - a) Select metal cutting power saw
      - b) Locate utilities
      - c) Cut in area away from utilities
      - d) Cut along studs, then fold back. If no stud, cut triangle, folding at bottom.
2. Metal walls
  - a. Rotary saw, with a metal cutting blade/disk, is tool of choice
    - 1) Determine if utilities are located in wall, if possible
    - 2) Cut in area away from utilities
    - 3) Cut along studs, if present, and then fold back metal
    - 4) If no studs, cut a triangle shaped hole large enough to pass through, folding at bottom

## **VI. Identify the construction materials of door and window locking devices. 2-10.6 (3-3.3(a))**

### **A. Construction features**

1. Mortise lock
  - a. Latch mechanism
  - b. Opening device (doorknob, lever, etc.)
  - c. Dead-bolt feature for added security

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2. Bored (cylindrical) lock
  - a. Hole bored in the face of the door for locking mechanism
  - b. Hole bored in edge of door to receive latch or bolt
  - c. Key-in-knob lock is one type of bored lock
    - 1) Key way in outside knob
    - 2) Inside knob may contain key way or button
3. Rim lock
  - a. Surface mounted
  - b. Used as an add on lock
  - c. Outside cylinder recessed into door
  - d. Latch mechanism fastened to inside of door
  - e. Strike is mounted to door frame
4. Padlock
  - a. Portable or detachable
  - b. Regular padlocks
    - 1) Shackles of ¼ inch or less
    - 2) Not case hardened
  - c. Heavy duty
    - 1) Toe and heel locking
    - 2) Both ends of shackle are locked
    - 3) Both sides of shackle must be cut

VI. Identify the procedures of through-the lock entry for doors and windows. **2-10.7**  
(3-3.3(a))

- A. Unscrewing the lock cylinder
1. Size up door and lock
  2. Check position of key way
  3. Place locking pliers on cylinder
  4. Unscrew cylinder and remove
  5. Identify type of mechanism
  6. Insert key tool into cylinder hole
  7. Manipulate locking mechanism
  8. Open door

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- B. Using the K-Tool
1. Size up door and lock
  2. Check that lock is not protected by collar or shield
  3. Check key way position
  4. Slide K-tool over cylinder
  5. Tap down with axe or Halligan bar
  6. Insert adze end of pry tool into strap of K-tool
  7. Pry up on tool
  8. Insert key tool and manipulate lock
  9. Open door
- C. Using A-tool
1. Size up door and lock
  2. Check key way position
  3. Slide A-tool between lock and door frame
  4. Tap A-tool behind lock
  5. Pry up on tool
  6. Insert key tool and manipulate lock
  7. Open door
- D. Through padlocks using Halligan hook
1. Insert hook of Halligan type bar into shackle
  2. Pull lock away from staple
  3. Strike bar with axe
  4. Drive hook through lock shackle, breaking it
- E. Through padlock using Halligan fork
1. Place fork over padlock shackles
  2. Twist lock until shackles break
- F. Through padlock using bolt cutters
1. Cut shackles
  2. Cut chain
  3. Cut staple

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VII. Identify methods and procedures for cleaning, maintaining and inspecting hand tools used for forcible entry. **2-10.8 (3-3.3)**

A. Wood handles

1. Inspect for cracks, blisters or splinters
2. Sand to minimize hand injuries
3. Wash with mild detergent, rinse and dry
4. Apply boiled linseed oil
5. Do not paint or varnish
6. Check for tightness of head

B. Fiberglass handles

1. Wash with mild detergent, rinse and dry
2. Check tightness of head.

C. Cutting edge

1. Inspect for nicks, tears or metal spurs
2. Replace when required
3. File edges by hand

D. Plated surfaces

1. Inspect for damage
2. Wipe clean or wash with mild detergent

E. Unprotected metal surfaces

1. Keep free of rust
2. Oil metal surface lightly
3. Avoid painting
4. Inspect for spurs, burrs or sharp edges

F. Axe heads

1. Do not paint axe heads
2. Sharpen with file, not grinder

G. Power equipment

1. Read and follow manufacturer's instructions
2. Ensure tools will start manually
3. Check blade for readiness and replace, if needed



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4. Check electrical components for cuts and frays
5. Ensure all guards are in place
6. Ensure fuel is fresh

**VIII. Demonstrate proper selection and safely carry of at least one of the following: 2-10.9 (3-3.3(b))**

**A. Cutting Tool 2-10.9.1**

1. Selection:
  - a. Axes and hatchets
  - b. Handsaws
  - c. Power saws
  - d. Metal cutting devices
  - e. Cutting torches
2. Safely carry
  - a. Carries blade away from body
  - b. Covers pick of axe with hand
  - c. Never carries on shoulder
  - d. Never carries power tools that are running

**B. Prying tool 2-10.9.2**

1. Selection
  - a. Manual prying tools
    - 1) Crowbar
    - 2) Halligan type bar
    - 3) Pry (Pinch) bar
    - 4) Hux bar
    - 5) Claw bar
    - 6) Kelly tool
    - 7) Pry axe
    - 8) Flat bar
  - b. Hydraulic prying tool
    - 1) Rescue tools
    - 2) Hydraulic door opener

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2. Carrying
  - a. Carries pointed or sharp edges away from body
  - b. Halligan type bar and flat head axe can be strapped together.

C. Pushing/pulling tools **2-10.9.3**

1. Selection
  - a. Pike pole
  - b. Clemens hook
  - c. Plaster hook
  - d. Drywall hook
  - e. San Francisco hook
  - f. Multi-purpose hook
  - g. Roofman's hook
2. Carrying
  - a. Carries tool head down close to ground and ahead when outside structure.
  - b. Inside structure, inverts tool and carries upright close to body.

D. Striking tools **2-10.9.4**

1. Selection
  - a. Sledgehammer
  - b. Maul
  - c. Battering ram
  - d. Pick
  - e. Flat head axe
  - f. Mallet
  - g. Hammer
  - h. Punch
  - i. Chisel
2. Carrying
  - a. Carries head of tool close to ground
  - b. Maintains firm grip as tools are heavy